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large and well dried, and the labels are full and of neat form and size. Occasionally, a specimen is somewhat deficient in roots, a fault which may easily be avoided in subsequent issues.—CHARLES E. BESSEY.

VEGETABLE PHYSIOLOGY.[1]

Saccardo's Color Scale.—The learned author of the Sylloge Fungorum has issued a second improved edition of his color scale (*Chromotaxia seu nomenclator colorum polyglottus additis speciminibus coloratis ad usum Botanicorum et Zoologorum.* Editio altera. Patavii. Typis Seminarii, 1894) which is very useful and ought to be in the hands of every botanist. The pamphlet contains 22 pages of Latin text and two well executed tables of 25 colors each. The text gives in regular order, from left to right: (1) The Latin name of the type color. (2) Latin synonyms. (3) Latin names of colors approaching the typical color. (4) Italian names. (5) French names. (6) English names. (7) German names. (8) Explanatory remarks. To illustrate, we have under the first entry: " Albus. Candidus, niveus, ermineus, virgineus, calceus, gypseus, cretaceous, cerussatus, olorinus. Albatus, albicans, albidus, albidulus, albineus, albinus, albulus, eburneus; pallidus, pallens, pallidulus; lacteus, lacticolor, galactites, galochrous; argenteus, argyraceous; candicans, canescens. Bianco, eburneo, pallido, latteo, argenteo, canescente. Blanc, blanc d'ivoire, pâle, blanc de lait, argentin. White, ivory-white, pallid, milk-white, silver-colored. Weiss, elfenbeinweiss, blass, milchweiss, silberfarben. Typical examples: *Lime, gypsum, snow, white lead, ermine.* Pallidus is an impure white. Argenteus, argyreus (from *argyros,* silver) is a metallic, shining white. Lacteus is the color of fresh cow's milk. Galactites, galochrous are from *gala,* milk. Candicans, canescens is pure or impure white resulting from a tomentum such as on the under side of the leaf of *Populus alba* or *Alnus incana.* Olorinus (from *Cygnus olor*) is a pure shining white (example *Clitocybe olorina*)." An examination of the color scale cannot fail to deepen the impression that it is futile to attempt to use color terms in natural history without referring them to some particular scale or standard. On first thought, nothing seems less likely to be misunderstood than such terms as fleshcolor, bay, or chestnut, and yet these names and many others call up quite different conceptions in different minds, and, where much depends on the accurate description of colors, are sure to mislead, unless referred to some exact color scale or well known object or substance of invariable color. In this particular scale, for example, *ater* does not represent the usual conception of a lusterless coal black, but is a lighter color between plumbeous and slate; *latericius* is not the color of any bricks commonly found in this country, but rather what the writer would designate a light chocolate; *badius* is scarcely the color of a bay horse; and *incarnatus* is certainly *not* the lively color of the lips. These matters. however, are trifles provided the colors of the scale are made from pigments that will be permanent and provided those who use it as a guide remember that it represents in many cases not the universal concept of particular colors but only the author's, and specify accordingly, e. g., "*violaceus* Sacc., No. 47." It is to be regretted that directions for reproducing these colors are not given. To see how widely color concepts vary, even among distinguished naturalists let the reader compare Saccardo's hazel (7), isabella (8), chestnut (10), scarlet (15), cream-color (27), emerald green (36) glaucous green (38), violet (47), and lilac (48) with Ridgway's numbers, IV 12, III 23, IV 9, VII 11, VI 20, X 16, X 17, VIII 10, and VIII 19 which bear the same names but are by no means the same colors. Evidently the perfect color scale is yet to be put upon paper, and owing to defects in pigments is not likely to appear soon. Meanwhile we may be thankful for those we have, using them as intelligently as possible, and never forgetting to specify, in cases where color is important, the particular scale in which a similar color may be seen. Saccardo's scale has a special value to mycologists, since it affords the users of that immense and indispensable work, the Sylloge Fungorum, a ready means of determining in a thousand and one descriptions exactly what color is meant, provided, of course, the author has used the terminology of this scale consistently throughout.—ERWIN F. SMITH.

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Kroeber's Transpiration Experiments.—It will be remembered that Müller-Thurgau believed he had demonstrated the amount of transpiration-water to be different in different varieties of vines and orchard trees, and that this fact could be turned to practical use by horticulturalists who, in dry soils or climates; should plant varieties, making small demands on transpiration, and in moist ones those transpiring abundantly. Very recently Mr. E. Kröber, assistant in the plant-physiological experiment station of the Königliches Lehranstalt at Geisenheim on the Rhine, has gone over the same ground in a long series of experiments (Ist die Transpirationsgrösse der Pflanzen ein Maassstab für ihre Anbaufähigkeit? *Landw. Jahrb.*, Bd. 24, 1895, H. 3, pp. 503–537) which throw doubt on Müller-Thurgau's methods and lead to the following opposite conclusions: (1) In determining the amount of transpiration the entire decrease in weight of the plant and apparatus must be taken into account and not simply the decrease of water in the flasks, since under pressure, in short experiments, the error resulting from the forcing into the wood of water which is not transpired is very considerable. (2) The demonstrated transpiration of any branch can *never* be taken as a measure of the transpiration of the whole tree. (3) The amount of transpiration of different branches of the same tree may be wider apart in many cases than that of branches of different trees or even of different varieties. (4) In parallel experiments, under exactly the same transpiration conditions, the ratio of the amount of water given off by different branches is by no means constant. (5) The influence and interchange of the different factors governing transpiration is quite different in different individuals. (6) The present condition of the individual and the circumstances under which it previously transpired have a great influence upon transpiration. (7) It follows that the amount of transpiration of a single individual cannot be regarded as a measure of the water requirements of the whole variety. According to the writer, Müller-Thurgau has also left out of account the capacity of individuals and varieties to adapt themselves to changed conditions.—ERWIN F. SMITH.

ZOOLOGY.

A Stratified Lake Fauna.—One of the most interesting results achieved by the naturalists of the Russian Biological Station on the island of Solowetzk in the North Sea, has been the discovery of a remarkable lake on the island of Kildine in the Arctic Ocean. This lake, which is completely separated from the sea by a narrow strip of land, was discovered by the Russian naturalist, M. H. Herzenstein, who was struck by finding in the lake a fish which is exclusively marine in habit, namely, the common cod. Further observations by MM. Faussek and Knipowitsch have elucidated the peculiar features of the fauna of the lake. On the surface the water is fresh, and is in-